PATENT
ATTORNEY DOCKET NO. 50082/015002

Certificate of Mailing: Date of Deposit: October 11, 2001

I hereby certify under 37 C.F.R. § 1.8(a) that this correspondence is being deposited with the United States Postal Service as **Express Mail Post Office to Addressee** with sufficient postage on the date indicated above and is addressed to: BOX PATENT APPLICATION, Assistant Commissioner for Patents, Washington, D.C. 20231.

Guy Beardsley
Printed name of person mailing correspondence

Signature of person mailing correspondence

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Grant McFadden et al.	Art Unit:	Not Assigned Yet
Serial No.:	Not Assigned Yet	Examiner:	Not Assigned Yet
Filed:	October 11, 2001	Customer No.:	21559
Title:	NUCLEIC ACID MOLECULES AND POLYPEPTIDES FOR IMMUNE MODULATION		

Assistant Commissioner For Patents
Washington, D.C. 20231

STATEMENT UNDER 37 C.F.R. § 1.821

As part of the patent application filed herewith, enclosed is a sequence listing in accordance with the requirements of 37 C.F.R. §§ 1.821 through 1.825 and consisting of six pages.

As required by 37 C.F.R. § 1.821(c), the sequence listing appears as a separate part of the application and is found after the Combined Declaration and Power of Attorney. Each sequence in the application appears separately in the sequence listing. And each sequence in the sequence listing is assigned a separate sequence identifier.

As required by 37 C.F.R. § 1.821(d), the sequence identifiers are used throughout

the application description and claims to refer to their respective sequences.

As required by 37 C.F.R. § 1.821(e), enclosed is a diskette containing a copy of the sequence listing in computer readable form.

As required by 37 C.F.R. § 1.821(f), I hereby state that the contents of the computer readable form are the same as the contents of the paper copy.

As required by 37 C.F.R. § 1.821(g), I hereby state that this submission contains no new matter.

If there are any charges, or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: October 11, 2001

Kristina Bieker-Brady, Ph.D.
Reg. No. 39,109

Clark & Elbing LLP
176 Federal Street
Boston, MA 02110
Telephone: 617-428-0200
Facsimile: 617-428-7045

F:\50082\50082.015002 Sequence Statement.wpd

SEQUENCE LISTING

<110> MCFADDEN, GRANT
ESSANI, KARIM

<120> NUCLEIC ACID MOLECULES AND POLYPEPTIDES
FOR IMMUNE MODULATION

<130> 50082/015002

<150> US 60/239,354
<151> 2000-10-11

<160> 9

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 26
<212> PRT
<213> Tanapox virus

<400> 1
Ile Thr Leu Lys Tyr Cys Tyr Thr Val Thr Leu Lys Asp Asn Gly Leu
1 5 10 15
Tyr Asp Lys Val Phe Tyr Cys His Tyr Asn
20 25

<210> 2
<211> 338
<212> PRT
<213> Yaba Monkey tumor virus

<400> 2
Met Asn Lys Leu Ile Leu Phe Ser Thr Ile Val Ala Val Cys Asn Cys
1 5 10 15
Ile Thr Leu Lys Tyr Asn Tyr Thr Val Thr Leu Lys Asp Asn Gly Leu
20 25 30
Tyr Asp Gly Val Phe Tyr Asp His Tyr Asn Asp Gln Leu Val Thr Lys
35 40 45
Ile Ser Tyr Asn His Glu Thr Arg His Gly Asn Val Asn Phe Arg Ala
50 55 60
Asp Trp Phe Lys Ile Ser Arg Ser Pro His Thr Pro Gly Asn Asp Tyr
65 70 75 80
Asn Phe Asn Phe Trp Tyr Ser Leu Met Lys Glu Thr Leu Glu Glu Ile
85 90 95
Asn Lys Asn Asp Ser Thr Lys Thr Thr Ser Leu Ser Leu Ile Thr Gly
100 105 110
Cys Tyr Glu Thr Gly Leu Leu Phe Gly Ser Tyr Gly Tyr Val Glu Thr
115 120 125
Ala Asn Gly Pro Leu Ala Arg Tyr His Thr Gly Asp Lys Arg Phe Thr
130 135 140
Lys Met Thr His Lys Gly Phe Pro Lys Val Gly Met Leu Thr Val Lys
145 150 155 160
Asn Thr Leu Trp Lys Asp Val Lys Thr Tyr Leu Gly Gly Phe Glu Tyr

165 170 175
Met Gly Cys Ser Leu Ala Ile Leu Asp Tyr Gln Lys Met Ala Lys Gly
180 185 190
Glu Ile Pro Lys Asp Thr Thr Pro Thr Val Lys Val Thr Gly Asn Glu
195 200 205
Leu Glu Asp Gly Asn Met Thr Leu Glu Cys Ser Val Asn Ser Phe Tyr
210 215 220
Pro Pro Asp Val Ile Thr Lys Trp Ile Glu Ser Glu His Phe Lys Gly
225 230 235 240
Glu Tyr Lys Tyr Val Asn Gly Arg Tyr Tyr Pro Glu Trp Gly Arg Lys
245 250 255
Ser Asp Tyr Glu Pro Gly Glu Pro Gly Phe Pro Trp Asn Ile Lys Lys
260 265 270
Asp Lys Asp Ala Asn Thr Tyr Ser Leu Thr Asp Leu Val Arg Thr Thr
275 280 285
Ser Lys Met Ser Ser Gln Leu Val Cys Val Val Phe His Asp Thr Leu
290 295 300
Glu Ala Gln Val Tyr Thr Cys Ser Glu Gly Cys Asn Gly Glu Leu Tyr
305 310 315 320
Asp His Leu Tyr Arg Lys Thr Glu Glu Gly Glu Gly Glu Glu Asp Glu
325 330 335
Glu Asp

<210> 3
<211> 1183
<212> DNA
<213> Yaba Monkey tumor virus

<400> 3
atgaataagt taattttatc gttgttgggt tttgtggcaa cttgcaattg tataacctta 60
agatataatt ataccgttac ggtaaagaat ggattatacg acggggtatt ttttgattat 120
tacaacgatc agttagtaac gaggatatca tataaccatg aaactagaca cggaaacgta 180
aattctagag cttcatggtt tgatatctct aaaagccctc atactccggg tgacgattac 240
cactttaact tttggtaccc gttaatgaaa gatactttgg agtccatcaa tagtaataaa 300
aacgaaagcg ataaatgttc ttcgttgtcg ttaattttgg ggtgttatga aacgggatct 360
ctttttggga gttacggata cgttgagtca agtggcggac cgttggctag gtatagcacg 420
aaagataaaa agtttttaaa aatgacagat aaaggatttc caaaggttgg aatgttaacc 480
gttcatggtc ctagttggca aacagttaaa aaatacgtgg gagggtttgt gtacgctgga 540
tgtttgctag ctatttttga ttatcaaaaa atggctaaga ataacatacc tagtaatgta 600
atgccaactg ttacggtaac gggtgaggaa ctgcaagatg gtaacacaac gcttaagtgt 660
aacgtaaaat ctttttaccc tccagacgta atgatcaagt ggatagaaag taaatatttt 720
aacggtgaat atagatacgt taatggaaga gaatacccgg aatggggaag gcaatcagat 780
tatgagcccg gagagccagg ttttccgtta catccaaaaa aagatgacgg taaaaccact 840
tacagccttt tagattttgg tcgcactacg tcaggattaa ctagtcagtt agtttgtgtt 900
gttttccatg acacgtttga atcgcaggtt aatacatgtt ccgaagggtg tgaaggtaaa 960
ttatacgatc acctatatag aaaatcggaa gaaggagacg aggttgtgga ggacgaagaa 1020
gactgaaaac aagtcgtggt ggaagctgtt ctgatcgcgc gtttacgttt ccgctagacg 1080
gaagtttgcc gcccgagagg gcgatgtttt ttttaaaaaa tgaaaaagta gatgataccg 1140
agcgatgacc gcgaaatgga ggttattaca gacggcgtgt tcg 1183

<210> 4
<211> 338
<212> PRT
<213> Tanapox virus

<400> 4
Met Asn Lys Leu Ile Leu Phe Ser Thr Ile Val Ala Val Cys Asn Cys

```
 1               5                  10                  15
Ile Thr Leu Lys Tyr Asn Tyr Thr Val Thr Leu Lys Asp Asn Gly Leu
            20                  25                  30
Tyr Asp Gly Val Phe Tyr Asp His Tyr Asn Asp Gln Leu Val Thr Lys
        35                  40                  45
Ile Ser Tyr Asn His Glu Thr Arg His Gly Asn Val Asn Phe Arg Ala
    50                  55                  60
Asp Trp Phe Lys Ile Ser Arg Ser Pro His Thr Pro Gly Asn Asp Tyr
65                  70                  75                  80
Asn Phe Asn Phe Trp Tyr Ser Leu Met Lys Glu Thr Leu Glu Glu Ile
                85                  90                  95
Asn Lys Asn Asp Ser Thr Lys Thr Thr Ser Leu Ser Leu Ile Thr Gly
            100                 105                 110
Cys Tyr Glu Thr Gly Leu Leu Phe Gly Ser Tyr Gly Tyr Val Glu Thr
        115                 120                 125
Ala Asn Gly Pro Leu Ala Arg Tyr His Thr Gly Asp Lys Arg Phe Thr
    130                 135                 140
Lys Met Thr His Lys Gly Phe Pro Lys Val Gly Met Leu Thr Val Lys
145                 150                 155                 160
Asn Thr Leu Trp Lys Asp Val Lys Thr Tyr Leu Gly Gly Phe Glu Tyr
                165                 170                 175
Met Gly Cys Ser Leu Ala Ile Leu Asp Tyr Gln Lys Met Ala Lys Gly
            180                 185                 190
Glu Ile Pro Lys Asp Thr Thr Pro Thr Val Lys Val Thr Gly Asn Glu
        195                 200                 205
Leu Glu Asp Gly Asn Met Thr Leu Glu Cys Ser Val Asn Ser Phe Tyr
    210                 215                 220
Pro Pro Asp Val Ile Thr Lys Trp Ile Glu Ser Glu His Phe Lys Gly
225                 230                 235                 240
Glu Tyr Lys Tyr Val Asn Gly Arg Tyr Tyr Pro Glu Trp Gly Arg Lys
                245                 250                 255
Ser Asp Tyr Glu Pro Gly Glu Pro Gly Phe Pro Trp Asn Ile Lys Lys
            260                 265                 270
Asp Lys Asp Ala Asn Thr Tyr Ser Leu Thr Asp Leu Val Arg Thr Thr
        275                 280                 285
Ser Lys Met Ser Ser Gln Leu Val Cys Val Val Phe His Asp Thr Leu
    290                 295                 300
Glu Ala Gln Val Tyr Thr Cys Ser Glu Gly Cys Asn Gly Glu Leu Tyr
305                 310                 315                 320
Asp His Leu Tyr Arg Lys Thr Glu Glu Gly Glu Gly Glu Glu Asp Glu
                325                 330                 335
Glu Asp
```

<210> 5
<211> 1034
<212> DNA
<213> Tanapox virus

<400> 5
aagcttcatg aataagttaa tattatttag cacaattgta gcagtttgta actgcataac 60
tttaaaatat aattatactg ttacgttaaa agataatggg ttatacgatg gagtatttta 120
cgatcattac aacgatcagt tagtaacgaa aatatcatat aaccacgaaa ctagacacgg 180
aaacgtaaat tttagggctg attggtttaa tatttctagg agtccccaca cgccaggtaa 240
cgattacaac tttaactttt ggtattcttt aatgaaagaa actttagaag aaattaataa 300
aaacgatagc acaaaaacta cttcgctttc attaatcact gggtgttatg aaacaggatt 360
attatttggt agttatgggt atgtagaaac ggccaacgga ccgttggcca gataccatac 420
aggagataaa aggtttacga aaatgacaca taaaggtttt cccaaggttg gaatgttaac 480

tgtaaaaaac actctttgga aagatgtaaa aacttatcta ggcggttttg aatacatggg 540
atgttcatta gctattttag attaccaaaa aatggctaaa ggtgaaatac caaaagatac 600
aacacctaca gtgaaagtaa cgggtaatga gttagaagat ggtaacatga ctcttgaatg 660
cagtgtaaat tcatttacc ctcctgacgt aattactaag tggatagaaa gcgaacattt 720
taaaggtgaa tataaatatg ttaacggaag atactatcca gaatggggga gaaaatccga 780
ttatgagcca ggagagccag gttttccatg gaatattaaa aaagataaag atgcaaacac 840
atatagttta acagatttag tacgtacaac atcaaaaatg agtagtcaac tagtatgtgt 900
tgttttccat gacactttag aagcgcaagt ttatacttgt tctgaaggat gcaatggaga 960
gctatacgac cacctatata gaaaaacaga agaaggagaa ggtgaagagg atgaagaaga 1020
cggaaaccct cgag 1034

<210> 6
<211> 338
<212> PRT
<213> Yaba-like disease virus

<400> 6
Met Asp Lys Leu Leu Leu Phe Ser Thr Ile Val Ala Val Cys Asn Cys
1 5 10 15
Ile Thr Leu Lys Tyr Asn Tyr Thr Val Thr Leu Lys Asp Asp Gly Leu
20 25 30
Tyr Asp Gly Val Phe Tyr Asp His Tyr Asn Asp Gln Leu Val Thr Lys
35 40 45
Ile Ser Tyr Asn His Glu Thr Arg His Gly Asn Val Asn Phe Arg Ala
50 55 60
Asp Trp Phe Asn Ile Ser Arg Ser Pro His Thr Pro Gly Asn Asp Tyr
65 70 75 80
Asn Phe Asn Phe Trp Tyr Ser Leu Met Lys Glu Thr Leu Glu Glu Ile
85 90 95
Asn Lys Asn Asp Ser Thr Lys Thr Thr Ser Leu Ser Leu Ile Thr Gly
100 105 110
Cys Tyr Glu Thr Gly Leu Leu Phe Gly Ser Tyr Gly Tyr Val Glu Thr
115 120 125
Ala Asn Gly Pro Leu Ala Arg Tyr His Thr Gly Asp Lys Arg Phe Thr
130 135 140
Lys Met Thr His Lys Gly Phe Pro Lys Val Gly Met Leu Thr Val Lys
145 150 155 160
Asn Thr Leu Trp Lys Asp Val Lys Ala Tyr Leu Gly Gly Phe Glu Tyr
165 170 175
Met Gly Cys Ser Leu Ala Ile Leu Asp Tyr Gln Lys Met Ala Lys Gly
180 185 190
Lys Ile Pro Lys Asp Thr Thr Pro Thr Val Lys Val Thr Gly Asn Glu
195 200 205
Leu Glu Asp Gly Asn Met Thr Leu Glu Cys Thr Val Asn Ser Phe Tyr
210 215 220
Pro Pro Asp Val Ile Thr Lys Trp Ile Glu Ser Glu His Phe Lys Gly
225 230 235 240
Glu Tyr Lys Tyr Val Asn Gly Arg Tyr Tyr Pro Glu Trp Gly Arg Lys
245 250 255
Ser Asn Tyr Glu Pro Gly Glu Pro Gly Phe Pro Trp Asn Ile Lys Lys
260 265 270
Asp Lys Asp Ala Asn Thr Tyr Ser Leu Thr Asp Leu Val Arg Thr Thr
275 280 285
Ser Lys Met Ser Ser Gln Pro Val Cys Val Val Phe His Asp Thr Leu
290 295 300
Glu Ala Gln Val Tyr Thr Cys Ser Glu Gly Cys Asn Gly Glu Leu Tyr
305 310 315 320
Asp His Leu Tyr Arg Lys Thr Glu Glu Gly Glu Gly Glu Glu Asp Glu
325 330 335

Glu Asp

<210> 7
<211> 1017
<212> DNA
<213> Yaba-like disease virus

<400> 7
atggataagt tactattatt tagcacaatt gtagcagttt gtaactgcat aactttaaaa 60
tataattata ctgttacgtt aaaagatgat gggttatacg atggagtatt ttacgatcat 120
tacaacgatc agttagtgac gaaaatatca tataaccatg aaactagaca cggaaacgta 180
aattttaggg ctgattggtt taatatttct aggagtcccc acacgccagg taacgattat 240
aactttaact tttggtattc tttaatgaaa gaaactttag aagaaattaa taaaaacgat 300
agcacaaaaa ctacttcgct ttcattaatc actgggtgtt atgaaacagg attattattt 360
ggtagttatg ggtatgtaga aacggccaac gggccgttgg ccagatacca tacaggagat 420
aaaaggttta cgaaaatgac acataaaggt tttcccaagg ttggaatgtt aactgtaaaa 480
aacactcttt ggaaagatgt aaaagcttat ttaggcggtt ttgaatatat gggatgttca 540
ttagctattt tagattacca aaaaatggct aaaggtaaaa taccaaaaga tacaacacct 600
acagtgaaag taacgggtaa tgagttagaa gatggtaaca tgactcttga atgcactgta 660
aattcatttt accctcctga cgtaattact aagtggatag aaagcgaaca ttttaaaggt 720
gaatataaat atgttaacgg aagatactat ccagaatggg ggagaaaatc caattatgag 780
ccaggagagc caggttttcc atggaatatc aaaaaagata aagatgcaaa tacatatagt 840
ttaacagatt tagtacgtac aacatcaaaa atgagtagtc aaccagtatg tgttgttttc 900
catgacactt tagaagcgca agtttatact tgttctgaag gatgcaatgg agagctatac 960
gatcacctat atagaaaaac agaagaaggg gaaggtgaag aggatgaaga agactga 1017

<210> 8
<211> 340
<212> PRT
<213> Swinepox virus (C1L)

<400> 8
Met Ile Thr Lys Ala Ile Val Ile Leu Ser Ile Ile Thr Ala Tyr Val
 1   5   10   15
Asp Ala Ser Ala Phe Leu Val Tyr Asn Tyr Thr Tyr Thr Leu Gln Asp
            20   25   30
Asp Asn His Arg Tyr Asp Phe Glu Val Thr Asp Tyr Phe Asn Asp Ile
        35   40   45
Leu Ile Lys Arg Leu Lys Leu Asn Ser Glu Thr Gly Arg Pro Glu Leu
    50   55   60
Arg Asn Glu Pro Pro Thr Trp Phe Asn Glu Thr Lys Ile Arg Tyr Tyr
65   70   75   80
Pro Lys Asn Asn Tyr Asn Phe Met Phe Trp Leu Asn Arg Met Ser Glu
                85   90   95
Thr Leu Asp Glu Ile Asn Lys Leu Pro Glu Thr Ser Asn Pro Tyr Lys
            100   105   110
Thr Met Ser Leu Thr Ile Gly Cys Thr Asp Leu Arg Gln Leu Gln Val
        115   120   125
Asn Phe Gly Tyr Val Thr Val Gly Gly Asn Ile Trp Thr Arg Phe Asp
    130   135   140
Pro Lys Asn Lys Arg Phe Ser Lys Val Arg Ser Arg Thr Phe Pro Lys
145   150   155   160
Val Gly Met Leu Thr Val Lys Ser Gln His Trp Glu Arg Val Met Glu
                165   170   175
His Leu Gly Ser Met Val Thr Leu Thr Cys Pro Phe Thr Ala Asp Asp
            180   185   190
Tyr Tyr Lys Ile Ser Lys Gly Tyr Ile Asp Lys Pro Val Lys Pro Thr

195 200 205
Val Thr Val Thr Gly Ile Glu Arg Gly Asp Asn Thr Thr Leu Ile Cys
210 215 220
Thr Phe Asp Asn His Tyr Pro Ser Ser Val Ala Val Lys Trp Tyr Asn
225 230 235 240
Ile Glu Asp Phe Ala Pro Asp Tyr Arg Tyr Asp Pro Tyr Val Asn Glu
245 250 255
Leu Leu Pro Asp Thr Asp Tyr Leu Pro Gly Glu Pro Gly Tyr Pro Thr
260 265 270
Ile Thr Arg Arg Leu Gly Asp Lys Tyr Leu Phe Thr Ser Ser Pro Arg
275 280 285
Val Met Val Pro Thr Ile Met Ser Asn Arg Ile Ala Cys Val Gly Phe
290 295 300
His Ser Thr Leu Glu Pro Ser Ile Tyr Arg Cys Val Asn Cys Ser Gly
305 310 315 320
Pro Glu Pro Val Leu Gln Tyr Gln Gly Asp Arg Arg Asn Asp Leu Glu
325 330 335
Asp Glu Glu Asp
340

<210> 9
<211> 1023
<212> DNA
<213> Swinepox virus (C1L)

<400> 9
atgattacta aagcgattgt gatattgtct attattacag catatgtaga tgcttccgca 60
ttcttagtat acaattatac atatacttta caagatgata atcatcgata tgacttcgaa 120
gtcaccgatt attttaatga tatactaata aaacgtttaa aactaaatag cgagacagga 180
agaccagaat taagaaatga accaccaaca tggtttaatg agactaagat tagatattat 240
ccgaaaaata attataattt tatgttctgg ctaaatagaa tgagtgaaac gctagatgag 300
ataaataaac ttccagaaac gagtaatcct tacaagacta tgtccttgac aattggatgt 360
actgatctaa gacaacttca agtaaatttc ggttatgtta ctgtaggtgg taatatatgg 420
acacgattcg accccaagaa taaacgcttt agtaaagtta gatcacgtac atttccaaag 480
gtaggaatgt taactgttaa atcacaacac tgggaacgtg ttatggaaca tcttggatca 540
atggtaacat taacatgtcc gtttacagcg gatgattatt ataaaatttc taagggatat 600
atagataagc cagttaagcc tactgttaca gttacaggaa ttgaaagagg agataatact 660
acattgatat gcacatttga taatcattat ccgtcgtcgg tcgctgttaa atggtataac 720
atcgaggact ttgctccgga ctatcgttat gatccgtacg taaatgaatt gcttcctgat 780
acggactatc taccgggtga accaggatat ccgactataa ctaggagatt aggtgataaa 840
tatttattta catcatcacc tagggttatg gtaccaacta tcatgtctaa tagaatagca 900
tgtgttggat ttcatagtac gttagaacca agcatatata gatgtgtaaa ctgctcggga 960
cctgagcctg ttttacaata ccagggagat agaaggaatg acttggagga tgaggaggat 1020
taa 1023